

# MT Worker Health

Montana Occupational Health & Safety Surveillance



## Work-Related Fatalities in Montana

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By Julia Brennan, Epidemiologist  
Montana Occupational Health & Safety Surveillance Program



Montana Department of  
**LABOR & INDUSTRY**

# Table of Contents

Executive Summary.....	3
Overview of Work-Related Fatalities in Montana .....	4
Areas of Prevention: Work-Related Fatalities in Montana.....	10
Transportation-Related Fatalities .....	11
Online Safety Resources – Vehicles and Transportation .....	18
Agriculture, Forestry, Fishing, and Hunting Industry Fatalities .....	19
Online Safety Resources – Agriculture Industry .....	21
Construction Industry Fatalities .....	22
Online Safety Resources – Construction Industry .....	23
Work-Related Fatalities and Older Workers .....	24
Online Safety Resources – Older Workers.....	27
Action Steps to Prevent Fatalities .....	28
Seat Belt Use .....	29
Speed – Drive for the Conditions.....	31
All-Terrain Vehicles (ATVs).....	31
Distracted Driving .....	32
In Conclusion.....	33
References .....	35

## Acknowledgements

- Montana Department of Labor & Industry – Data Management Section – Bureau of Labor Statistics Census of Fatal Occupational Injuries
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- Montana Fish, Wildlife & Parks
- Texas Transportation Institute – Center for Transportation Safety

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# Executive Summary

Montana has one of the highest work-related fatality rates in the country. In 2016, 38 workers lost their lives while on the job in Montana. Every worker death is one too many, so it is imperative that we look at all available resources to address this major issue. What areas can we target to improve worker health by preventing worker deaths in Montana?

This report provides a detailed overview of work-related fatalities in Montana in recent years, and highlights information and actions steps focused on four main target areas of prevention:

- Transportation-related worker deaths,
- Worker deaths in the Agricultural industry,
- Worker deaths in the Construction industry, and
- Worker deaths among older workers

**The statistics shared in this report represent workers who did not go home at the end of their work day. The purpose of using this data is to learn how to prevent worker fatalities in the future.**

## Major Takeaways from the Data:

**Transportation incidents accounted for 50% of all worker deaths in Montana from 2004-2016.**

- 33 workers died in transportation incidents in 2015 and 2016, more than any other type of event or exposure in Montana.
- Jackknife or overturn incidents without a collision killed the most workers in 2015 and 2016.
- The majority of workers who died in transportation incidents in 2015 and 2016 worked in agricultural and transportation industries and occupations.

**One-third of all worker deaths in Montana from 2012-2016 were in the Agriculture, Forestry, Fishing, & Hunting industry.**

- ATVs (all-terrain vehicles) were involved in 7 worker deaths in 2015 and 2016.

**Half of the workers who died in the Construction Industry in 2016 were from falls to a lower level.**

**Workers 45 years old and up have the highest number of worker deaths, but represent less than half of all employed workers in Montana.**

- 71% of all workers who died in Montana from 2012-2016 were 45 years old and older.

**This report provides helpful information to target major issues related to worker fatalities in Montana, as well as practical action steps to improve the safety of our state's workforce.**

**For more information about worker health and safety issues facing Montana, or for questions about this report, please visit [www.mtworkerhealth.com](http://www.mtworkerhealth.com) or call (406) 444-1722.**

*Note: Most of the data in this report comes from the Bureau of Labor Statistics Census of Fatal Occupational Injuries (CFOI). The Census of Fatal Occupational Injuries is a verified, complete census of all workers who were killed at work due to a traumatic injury in the state, and across the nation. The CFOI program includes data for all fatal work injuries, regardless of scope of regulatory coverage. The CFOI data shared in this report is all publicly available. At the time of the release of this report, the most recent CFOI data available was for calendar year 2016.*

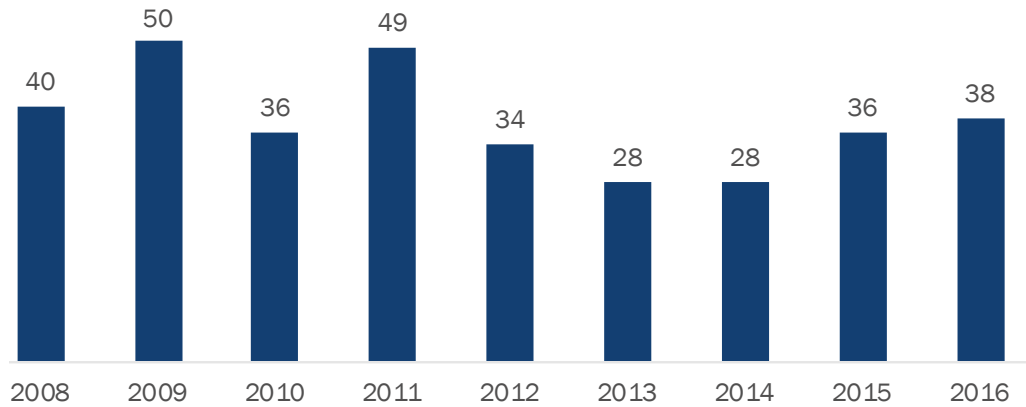


# Overview of Work-Related Fatalities in Montana

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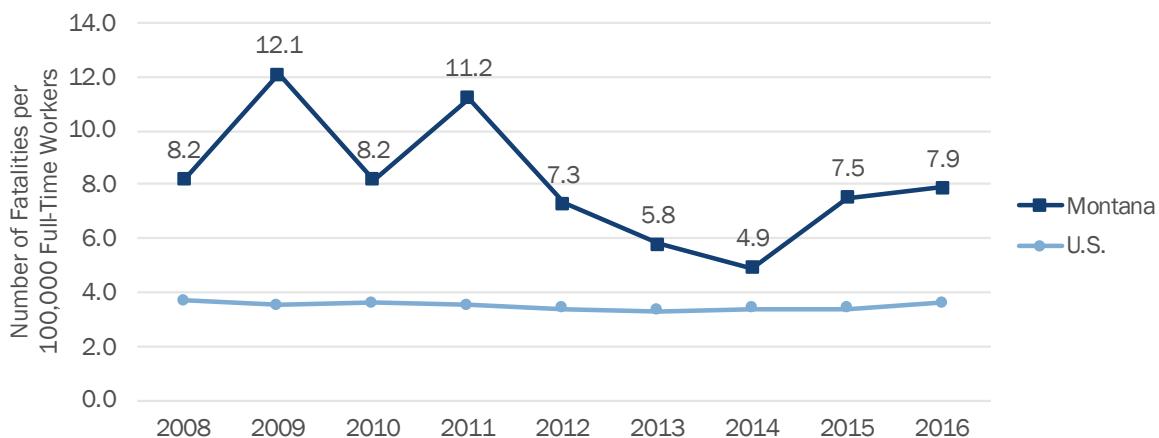


## Total Counts of Work-Related Fatalities in Montana, 2008-2016



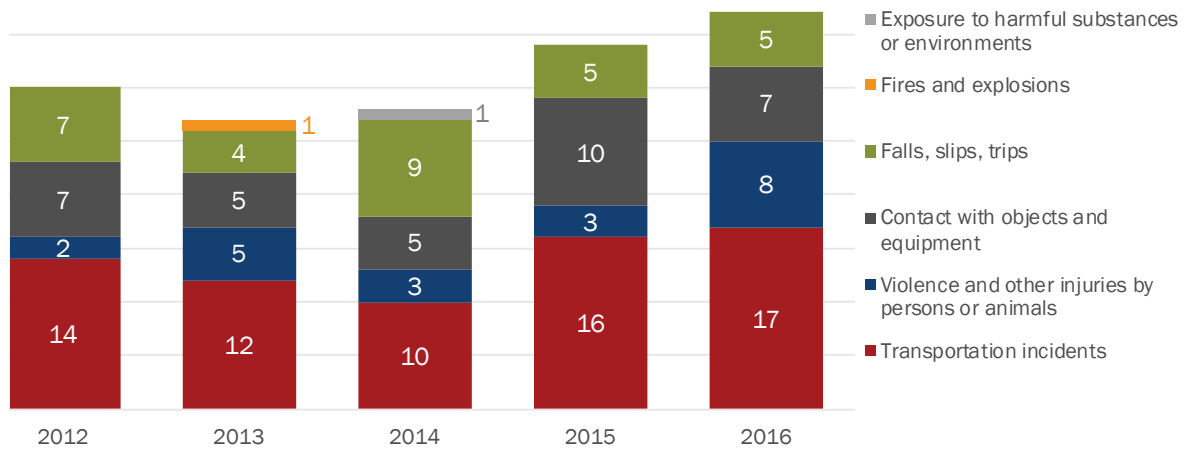
The number of work-related fatalities in Montana increased from 28 deaths in 2014 to 36 in 2015. There were 38 worker deaths in Montana in 2016.

## Rates of Work-Related Fatal Injuries per 100,000 Full-Time Workers in Montana, 2008-2016



In 2016, there were 38 worker deaths in Montana, resulting in a rate of 7.9 worker deaths per every 100,000 full-time workers in the state. The number of work-related deaths in Montana has generally hovered between 35-40 worker deaths every year, with the highest numbers of worker deaths occurring in 2009 and 2011. In 2015 and 2016, the number and rate of Montana's work-related fatalities increased. The national rate is given as frame of reference in the second chart, but should not be compared to the state rate.

## Counts of Work-Related Fatalities by Event or Exposure of the Fatality



*Event or Exposure: the manner in which the fatality was inflicted by the source of the fatality.*

*Note: Cases may not add up to the total fatality count for each year due to data availability.*



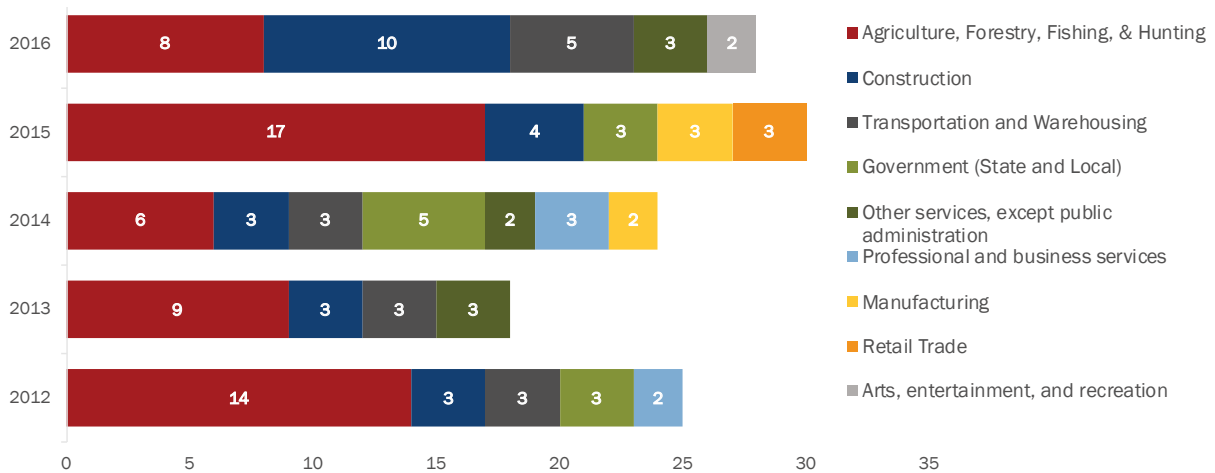
Transportation incidents accounted for **50%** of worker deaths in Montana from 2004-2016.

In 2016, there were 38 work-related fatalities:

- 17 transportation incidents (in red),
- 8 events of violence or other injuries by persons or animals (in blue),
- 7 events of contact with objects or equipment (in dark gray),
- 5 falls, slips, and trips (in light green).

Transportation incidents are the cause of death for the most workers in Montana. In fact, 50% of all worker deaths since 2004 resulted from transportation incidents. Transportation incidents include transportation vehicles, industrial vehicles, animals, and powered industrial equipment used in normal operation, that are involved in a collision or type of traffic incident. An example of a transportation incident would be a contractor working in the construction industry who drives a pick-up truck between remote job sites for work. A transportation incident fatality does not have to be a worker in the Transportation industry. In fact, these worker deaths occur more frequently in the agriculture and construction industries. For more information on transportation incidents, please visit the later section on Transportation-Related Fatalities (page 11).

## Counts of Work-Related Fatalities by Industry by Year in Montana, 2012-2016

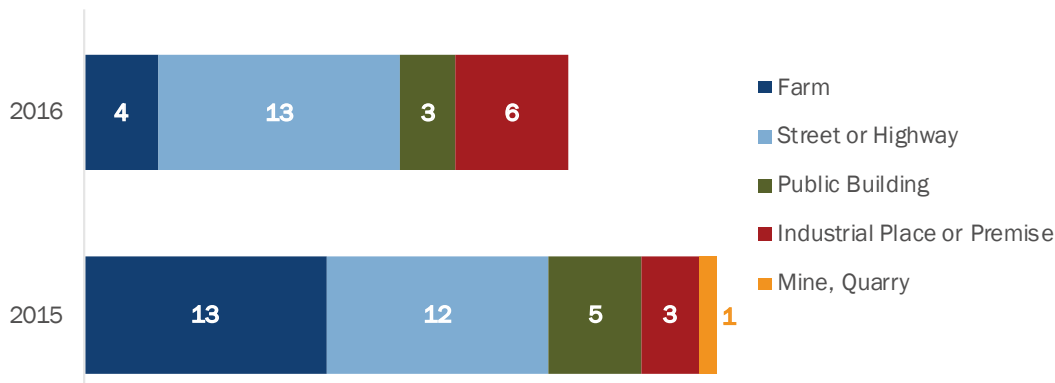


Note: Cases may not add up to total fatality count due to availability of counts of fatalities by industry. This graph only shows industries with more than one worker death in the calendar year.



**One-third** of all worker deaths in Montana from 2012-2016 were in the Agriculture, Forestry, Fishing, & Hunting industry. 54 workers died in this industry from 2012-2016.

## Counts of Locations of Work-Related Fatalities in Montana, 2015 and 2016

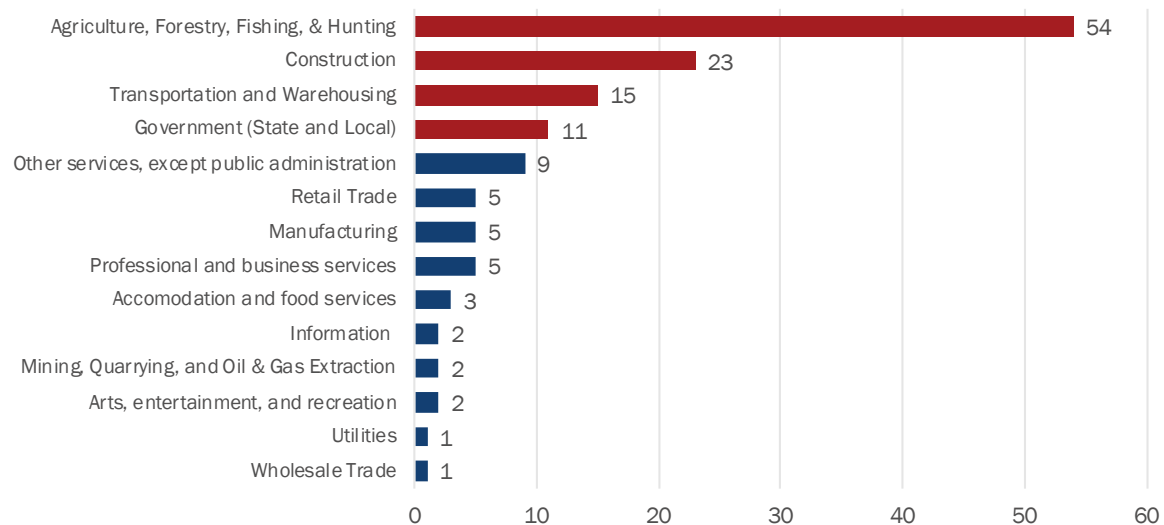


Note: Location is not reported or available for each fatality (BLS CFOI).



Workers died most frequently on **streets or highways** (25 workers) and **farms** (17 workers).

## Total Counts of Work-Related Fatalities by Major Industry in Montana, 2012-2016



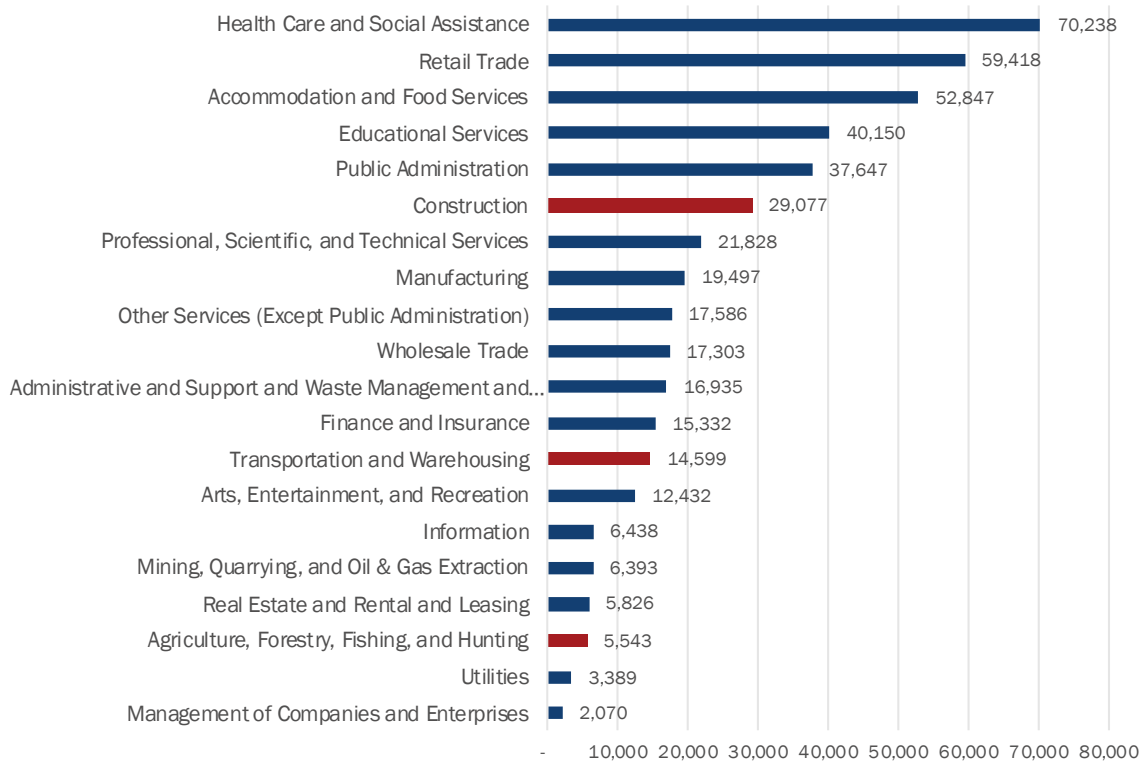
The industries with the most worker deaths in recent years are Agriculture, Forestry, Fishing, and Hunting, Construction, Transportation and Warehousing, and Government.

A third of all worker deaths from 2012 to 2016 were in the Agriculture, Forestry, Fishing & Hunting industry sector (54 workers). In 2015 alone, there were 17 worker deaths in this industry. Transportation incidents involving ATVs, pick-up trucks, and tractors were responsible for the majority of worker deaths in the Agriculture industry, along with events of contact with machinery.

From 2012 to 2016, 23 workers died in the Construction industry, noted in blue on the top chart on the previous page. Ten workers died in the Construction industry in 2016, and 5 of those deaths were from falls, slips, and trips. Workers also died most frequently in the Transportation industry from 2012 to 2016 (15 fatalities). The Transportation & Warehousing industry sector includes air and rail transportation, freight trucking, transit systems, buses, pipeline transportation, the postal service, and warehousing & storage. For more information on worker deaths in Agriculture and Construction industries, please visit the later section of this report (pages 19 and 20).



## Total Number of Employed Workers by Industry in Montana, Annual Average, 2016



Source: BLS QCEW 2016 data (Includes all ownerships (Federal/State/Local Government included))

This chart shows the number of employed workers in each industry category in Montana, including government workers. The industries in red are the top industries for worker fatalities in Montana, from 2014-2016: Construction, Transportation and Warehousing, and Agriculture, Forestry, Fishing, and Hunting.

# Areas of Prevention: Work-Related Fatalities in Montana

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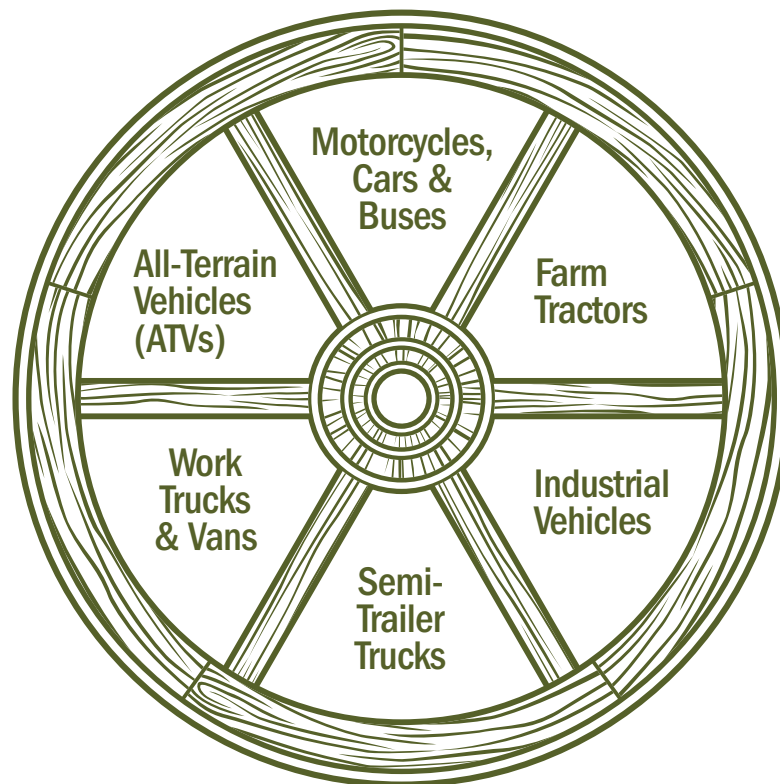
- Transportation-Related Fatalities
- Agriculture, Forestry, Fishing, and Hunting Industry
- Construction Industry
- Older Workers



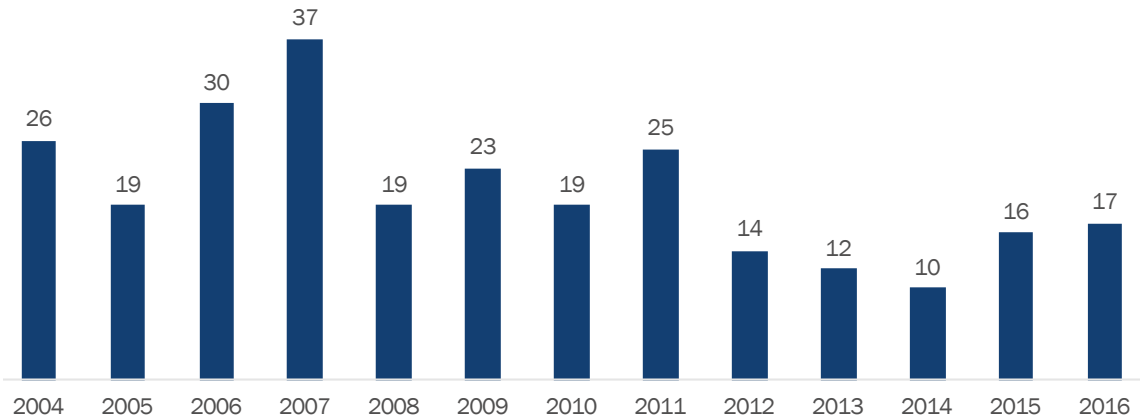
## Transportation-Related Fatalities

Since 2004, 267 workers have died in transportation incidents in Montana. From 2015 through 2016, 33 workers died in transportation incidents in Montana (16 deaths in 2015 and 17 deaths in 2016). About 45% of all worker deaths in 2015 and 2016 were due to transportation incidents, responsible for more worker deaths than any other event or exposure. Wage and salary workers were 60% of the workers who died in transportation incidents in 2015 and 2016, and 40% of the workers were self-employed. Additionally, 29 of the 33 transportation incident fatalities were men.

### Vehicles, Transports, & Industrial Equipment in Transportation Incidents Include:



### Counts of Work-Related Fatalities Resulting from Transportation Incidents, Montana, 2004-2016



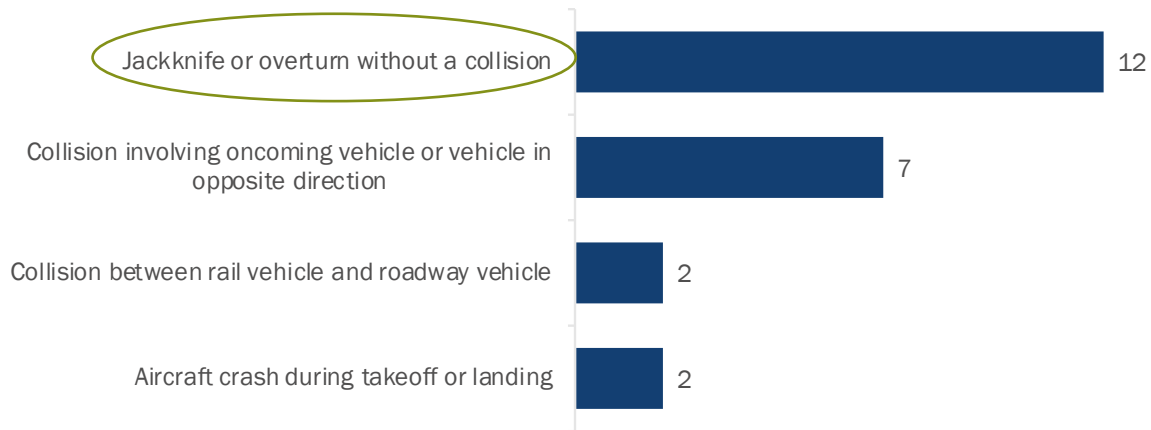
Source: Bureau of Labor Statistics Census of Fatal Occupational Injuries

A “transportation incident” event is defined as a collision, traffic incident, sudden stop or start of a vehicle involving transportation vehicles. More information about types of vehicles and equipment included in transportation incident events can be found in the Occupational Injury and Illness Classification Manual ([www.bls.gov/iif/oshoiics.htm](http://www.bls.gov/iif/oshoiics.htm)).



33 workers died in transportation incidents in 2015 and 2016, more than any other type of event or exposure in Montana.

## Counts of Types of Transportation Incidents Resulting in Fatalities, Montana, 2015 and 2016



Source: Bureau of Labor Statistics Census of Fatal Occupational Injuries (types noted when available)



**Jackknife or overturns without a collision** killed the most workers in 2015 and 2016.

A vehicle can “jackknife” when the tires lose traction after braking, causing the trailer being towed behind to push the vehicle around, resembling a “V” shape. Trucks pulling trailers can be especially prone to jackknifes when roads are icy or slick. Illustrations of jackknifed or overturned vehicles are provided below.

### Jackknifing and Overturns Transportation Incidents



*A semi-tractor trailer jackknifes in winter.*



*An overturned vehicle.*

## Major Industries Represented in Transportation Incidents, 2015 and 2016

Industry	# Transportation Incident Deaths	# on Roadways	# on Non-Roadways
<b>All Industries</b>	<b>33</b>	<b>21</b>	<b>4</b>
<b>Agriculture, Forestry, Fishing, and Hunting</b>	<b>12</b>	<b>7</b>	<b>1</b>
Cattle Ranching and Farming	10	4	-
<b>Retail Trade</b>	<b>6</b>	<b>3</b>	-
<b>Transportation and Warehousing</b>	<b>6</b>	<b>2</b>	-
General freight trucking, long-distance, truckload	1	1	-
School and employee bus transportation	1	1	-
Nonscheduled air transportation	1	-	-

*Note: Industry and location data are listed when available for worker deaths. When available, information is included on the number of transportation incident fatalities on roadways and non-roadway, which may not add up to the total number based on data availability. The symbol “-” indicates that the data was “not publishable” under BLS guidelines.*

In addition, the following industries had 1 transportation incident fatality from 2015 through 2016:

- Plumbing, heating, and air conditioning contractors
- Wireless telecommunications carriers
- Independent artists, writers, and performers
- Political organizations



## Occupations Represented in Transportation Incidents, 2015 and 2016

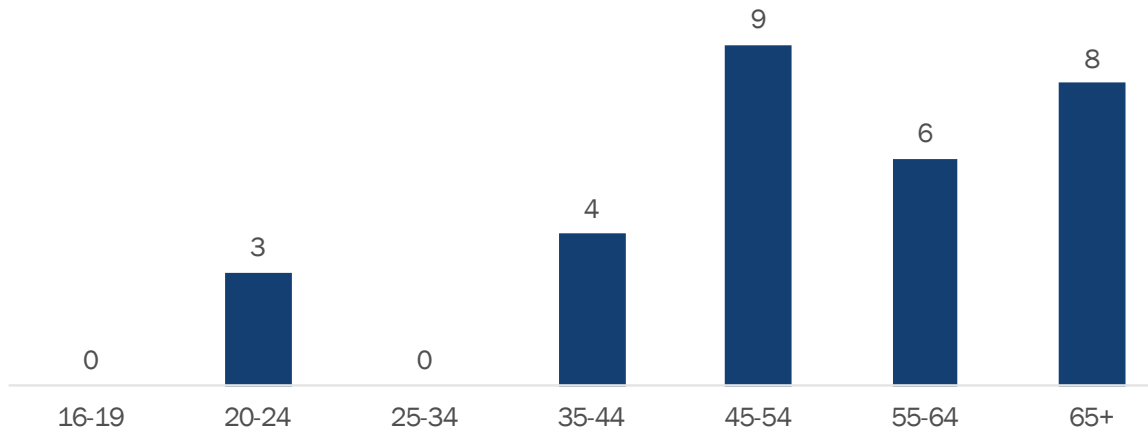
Occupation	# Transportation Incident Deaths	# on Roadways	# on Non-Roadways
<b>All Occupations</b>	<b>33</b>	<b>21</b>	<b>4</b>
Farmers, ranchers, and other agricultural managers	7	-	2
Heavy and tractor-trailer truck drivers	6	5	-
Farmworkers, farm, ranch, and aquacultural animals	3	2	-
Heating, air-conditioning, refrigeration mechanics and installers	1	-	-
Bus drivers, school or special client	1	1	-
Political scientists	1	1	-
Commercial pilots	1	-	-

*Note: Occupation and location data are listed when available for worker deaths. When available, information is included on the number of transportation incident fatalities on roadways and non-roadway, which may not add up to the total number based on data availability. The symbol “-” indicates that the data was “not publishable” under BLS guidelines.*



The majority of workers who died in transportation incidents in 2015 and 2016 worked in **agricultural** and **transportation** industries and occupations. Transportation incidents most frequently occurred on roadways.

## Counts of Transportation Incidents by Age Group, Montana, 2015 and 2016



Note: Data on age in transportation incident fatalities was not available in every case (BLS CFI data).



Workers age 45 and above died in the majority of transportation incidents. In particular, 14 workers **age 55 and above** died in transportation incidents in 2015 and 2016.

## Transportation Incident Types by Age Group, 2015 and 2016

Age Group	20-24 years old	35-44 years old	45-54 years old	55-64 years old	65 years old & up
Jackknife or overturn without a collision	1	2	2	2	2
Collision involving oncoming vehicle or vehicle in opposite direction	2	-	-	1	-
Collision between rail vehicle and roadway vehicle	-	1	-	-	1
Aircraft crash during takeoff or landing	-	-	1	1	-

Note: Data on age in transportation incidents were not available for every fatality (BLS CFI data).



Workers of various age groups died in jackknifing or overturning events without a collision

## Work-Related Vehicle Fatalities, 2015 and 2016

### Vehicles as Primary Source of Fatalities

Another way to examine work-related fatalities related to transportation is to examine the fatalities where the primary source of the fatality was a vehicle. In 2015 and 2016, there were 38 fatalities where the primary source of the fatality was a vehicle (19 fatalities each year). In those fatalities, a vehicle was the object or exposure which “most directly led to, produced, or inflicted” the fatal injury (BLS CFOI). These vehicle-as-primary-source fatalities may overlap with the fatalities described as transportation incidents previously.



**Vehicles** were the primary source of fatality in 38 worker deaths in 2015 and 2016.

Motorized highway vehicles were the most common types of vehicles involved in worker deaths in 2015 and 2016 (22 fatalities). Motorized highway vehicles include automobiles, buses, semi/tractor-trailer trucks, boom trucks, tow trucks, pickup trucks, and sports utility vehicles. The most common motorized highway vehicle source of fatality was the pickup truck, which was the primary source in 8 worker deaths in 2015 and 2016. Semi, tractor-trailer, and tanker trucks were responsible for 4 worker deaths in 2015 and 2016. Automobiles, buses, boom trucks, tow trucks, and SUVs were each the primary vehicle source of fatality in 1 worker death each in 2015 and 2016.



**Motor vehicles** were the primary source of fatality in 22 worker deaths in 2015-2016. Of those 22 deaths, pick-up trucks were involved in 8 worker deaths in 2015-2016.

The second most-common vehicles were off-road or industrial vehicles (13 fatalities in 2015 and 2016). The majority of those deaths were in the natural resources and mining industry sector, which includes agriculture (12 fatalities). All-terrain vehicles (ATVs) were involved in 7 worker deaths in 2015 and 2016. Farm tractors were involved in 4 worker deaths.



**ATVs (all-terrain vehicles)** were involved in 7 worker deaths in 2015 and 2016.

Aircraft are also considered to be vehicle sources of fatality. Powered, fixed wing airplanes were the vehicle source of fatality in 2 worker deaths in 2016.

Workers in the natural resource and mining industry were killed most frequently in fatal events involving vehicles as the primary source of fatality, more than any other industry in 2015 and 2016 (22 worker deaths). Workers in the trade, transportation, and utilities industry sector were also killed frequently in fatal events involving vehicles as the primary source (8 workers in 2015 and 2016).

## Online Safety Resources – Vehicles and Transportation

**Preventing Work-Related Motor Vehicle Crashes** – [www.cdc.gov/niosh/docs/2015-111/pdfs/2015-111.pdf](http://www.cdc.gov/niosh/docs/2015-111/pdfs/2015-111.pdf)

This fact sheet provides guidance on creating a company-specific motor vehicle safety plan (National Institute for Occupational Safety and Health). Highlights of the Motor Vehicle Safety Checklist include:

- Company leaders commit to road safety
- Journey management
- Preventing distracted and drowsy driving
- Safety and well-maintained vehicles

**Address Distracted Driving** – [www.nsc.org/learn/pages/nsc-on-the-road.aspx](http://www.nsc.org/learn/pages/nsc-on-the-road.aspx)

This Safety on the Road webpage describes distracted driving, and provides additional resources for employers and workers on safe driving practices (National Safety Council).

**Speed Warning Signs** – <https://static.tti.tamu.edu/tti.tamu.edu/documents/0-4813-1.pdf>

The Center for Transportation Safety (groups.tti.tamu.edu/cts) at the Texas A&M Transportation Institute evaluated dual advisory speed warning signs for different vehicles on freeway connectors, which are areas of high risk for truck rollovers, due to high speeds of the vehicles and curves on the road.

**Prevent Fatigued Driving at Work for Workers and Employers** – [www.cdc.gov/niosh/docs/2018-126/default.html](http://www.cdc.gov/niosh/docs/2018-126/default.html)

Information about factors that can lead to fatigued driving, and tips to prevent fatigued driving for workers faced with long trips (National Institute for Occupational Safety and Health).

**Winter Driving in Montana** – [www.mdt.mt.gov/publications/docs/brochures/winter\\_maint/winter\\_survival.pdf](http://www.mdt.mt.gov/publications/docs/brochures/winter_maint/winter_survival.pdf)

The “Winter Driving” section of this survival guide outlines important safety measures that all Montanans can take, both on and off the job to drive more safely in winter weather. (Montana Department of Transportation).

**Guidelines for Employers to Reduce Motor Vehicle Crashes** – [www.osha.gov/Publications/motor\\_vehicle\\_guide.html](http://www.osha.gov/Publications/motor_vehicle_guide.html)

An overview of steps employers can take to implement safe driving programs, including employer success stories, a motor vehicle crash cost worksheet, a ten-step program to reduce crashes, and other safe driving resources (Occupational Safety and Health Administration).

**Seat Belt Safety for Adults** – [www.nhtsa.gov/risky-driving/seat-belts#resources-resources](http://www.nhtsa.gov/risky-driving/seat-belts#resources-resources)

The National Highway Traffic Safety Administration has several webpages devoted to traffic safety issues, including seat belt use, distracted driving, and speeding (National Highway Traffic Safety Administration). In particular, this webpage highlights important points about seat belt use in adults:

- Buckling up is the single most effective thing you can do to protect yourself in a crash
- Air bags are designed to work with seat belts, not replace them

**Know the Hazards of Driver Distraction** – <https://drivethru.gsa.gov/DRIVERSAFETY/DriverDistraction-brochure.pdf>

This brochure provides driver safety recommendations and details common driver distractions that can lead to injuries or fatal crashes (Oregon Fatality Assessment and Control Evaluation Program).

## Agriculture, Forestry, Fishing, and Hunting Industry Fatalities

One-third of all worker deaths in Montana from 2012 to 2016 were in the Agriculture, Forestry, Fishing, and Hunting industry (54 worker deaths). The highest number of workers who died in a single year was in 2012, with 17 worker deaths in this industry. In 2016, there were 8 worker deaths in this industry.

Using available data, we found that 44% (24) of the worker deaths in this industry from 2012 to 2016 were from transportation incidents, and 24% (13) of the worker deaths were from contact with objects and equipment. Looking just at 2015 and 2016, transportation incidents were responsible for most worker deaths in this industry (12 worker deaths), followed by contact with objects and equipment (5 worker deaths), and falls, slips, and trips events (3 worker deaths).



Workers in the Agriculture, Forestry, Fishing, and Hunting industry are dying most frequently in transportation incidents in Montana.



## Fatalities in the Agriculture Industry from Vital Statistics, 2015-2017

We examined information on death certificates from the Montana Department of Public Health and Human Services that covered potential “injuries at work” from 2015 through 2017. The BLS CFI data is the completely verified, carefully compiled census of fatal injuries in Montana, but some additional useful information can be pulled from the death certificates on potential worker fatalities.

We reviewed death certificates where the details indicated “injury at work” for deaths in the Agriculture industry. When available, industry data was verified with workers compensation industry data from the Montana Department of Labor & Industry.

Overview of Causes	Count	Notes
Caught in or crushed by machinery	6	Machinery includes: hopper, harrow, swather, tractor, haybuster
ATV rollovers	5	
Fall from elevation or same level	<5	1-4 deaths
Drowning	<5	1-4 deaths
Vehicle rollovers (not ATVs)	<5	1-4 deaths
Runover by vehicle	<5	1-4 deaths
Falls from horses, tractors, or other vehicles	<5	1-4 deaths

*Note: Unable to report exact counts of less than 5 cases (DPHHS Data Reporting Policies)*



5 agriculture workers died in ATV rollovers from 2015-2017. 6 agriculture workers died from getting caught in or crushed by farm equipment from 2015 and 2017.

Workers died in the agriculture industry from being caught or crushed by machinery in recent years. Based on the available death certificate data, these worker deaths resulted from both maintenance and non-maintenance activities. Working with farm equipment is dangerous both within regular operation and during maintenance activities. Safety resources related to agricultural equipment are provided below.

All-terrain vehicles (ATVs) have high centers of gravity and can overturn or rollover due to high speeds, uneven ground, ditches, or other terrain issues. Tight or quick turns can also lead to ATV rollovers. Personal protective equipment should be worn for protection, but ATV operators are still at risk for severe or fatal injuries, and should practice safety measures described in the Safety Resources on the next page.



## Online Safety Resources – Agriculture Industry

### **Farm & Ranch ATV Safety** – [www.safeatv.org](http://www.safeatv.org)

This webpage provides resources covering ATV safety topics, such as animal handling, spraying, fencing, and other general ATV safety issues. In addition, the webpage also has this Farm and Ranch ATV Safety brochure ([www.safeatv.org/documents/ATV-Safety-PRINT.pdf](http://www.safeatv.org/documents/ATV-Safety-PRINT.pdf)) covering various ATV safety topics (Montana State University Extension).

### **All-Terrain Vehicle (ATV) Safety at Work** – [www.cdc.gov/niosh/docs/2012-167/pdfs/2012-167.pdf](http://www.cdc.gov/niosh/docs/2012-167/pdfs/2012-167.pdf)

All-terrain vehicles (ATVs) have a high center of gravity and a narrow wheelbase, which can lead to rollovers. This document provides an overview of safe practices to operating ATVs while working, as well as additional online resources to learn more about ATV safety (National Institute for Occupational Safety and Health).

### **ATV Rider Safety Online** – <http://maperc.mycrowdwisdom.com/diweb/catalog/item?id=1727731>

This unique online training teaches participants about the risks associated with using ATVs on ranches and farms, and how to safely operate ATVs. The online lessons include an introduction to ATV safety, safety gear, operations, riding strategies, advanced techniques, and agricultural uses. The online training is fairly affordable, and costs \$25 for a one year subscription (Colorado School of Public Health, in partnership with Montana State University and the High Plains Intermountain Center for Agricultural Health and Safety).

### **ATV Safety for Kids and Parents** – [www.progressiveag.org/fs4jk.cgi](http://www.progressiveag.org/fs4jk.cgi)

Special steps should be taken to make sure children are safe while operating ATVs at all times, whether on the farm or out having fun. This website provides a wide range of farm safety topics for kids, including ATV Safety and Rural Roadway lessons and fact sheets (Progressive Agriculture Foundation).

### **ATV Safety from 4-H** – [www.atv-youth.org/resources.html](http://www.atv-youth.org/resources.html)

This webpage from 4-H has a variety of resources and educational materials devoted to ATV Safety issues for both children and adults (Oklahoma State 4-H Program).

### **Agricultural Machinery Maintenance: Preventing Accidents** – <http://nasdonline.org/1679/d001579/agricultural-machinery-maintenance-preventing-shop-accidents.html>

This guide provides an overview of causes of injuries while repairing agricultural machinery, as well as steps to take to prevent injuries while repairing agricultural machinery (University of Idaho).

### **Agricultural Machinery Safety** – [agrilife.org/agsafety/files/2011/06/AGRICULTURAL-MACHINERY-SAFETY2.pdf](http://agrilife.org/agsafety/files/2011/06/AGRICULTURAL-MACHINERY-SAFETY2.pdf)

This fact sheet reviews common causes of agricultural machinery injuries and deaths, and provides case studies to illustrate the consequences of agricultural machinery hazards. (Texas AgriLife Extension Service).

### **Montana Ag Safety Program** – [www.mtagrisafety.com/practice\\_areas](http://www.mtagrisafety.com/practice_areas)

The Montana Ag Safety program provides safety templates covering a wide variety of agriculture safety topics, including ATVs, pickups, machinery safety, and tractors and motorized equipment. Templates are also available for safety orientations and farm safety assessments. Information is available in both English and Spanish.

## Construction Industry Fatalities

From 2012 to 2016, 14% of all worker deaths were in the Construction industry in Montana. The number of worker deaths in the Construction industry more than doubled from 4 worker deaths in 2015 to 10 worker deaths in 2016 (BLS CFOI).



10 workers died in 2016 in the Construction Industry. Half of those worker deaths were from falls to a lower level.

Workers died in the following Construction industry sectors in Montana in 2016:

**3 deaths** – residential building construction

**2 deaths** – highway, street, and bridge construction

**1 death** – industrial building construction

**1 death** – power and communication line and related structures construction

**1 death** – specialty trade contracting

Most of the Construction industry deaths in 2016 were in the private sector (6 worker deaths). Of the workers who died outside of the private sector, one worker was self-employed as a specialty trade contractor, and one worker was employed by the government in highway, street and bridge construction.

There was information on the event or exposure for 7 worker deaths in the Construction industry in 2016. Five workers died from falls to a lower level. Three of those workers worked in the residential building construction industry, and one worker worked in the specialty trade contractor industry. One worker died from intentional shooting by another person (homicide). Finally, one worker died from an unintentional shooting by another person. There was information on the primary source of the fatal injuries in the case of four worker deaths in 2016:

- Boom truck, bucket, or basket hoist truck
- Automobile truck – motorized freight hauling and utility
- Assailant, suspect, or inmate
- Co-worker

## Online Safety Resources – Construction Industry

**Preventing Falls in Construction Workbook** – [www.mc.uky.edu/kiprc/programs/face/training/files/FallsWorkbook-WithAnswerKey.pdf](http://www.mc.uky.edu/kiprc/programs/face/training/files/FallsWorkbook-WithAnswerKey.pdf)

This workbook addresses four key fall-related hazards in construction jobs, and provides specific prevention strategies and safety resources. The four key fall-related hazards are 1) unprotected edges, wall openings, and floor holes; 2) improper scaffold construction; 3) unguarded protruding steel rebars; 4) misuse of portable ladders (Kentucky Occupational Safety and Health Surveillance Program).

**Fall Protection Resource for Residential Construction** – [www.ot.wustl.edu/fptech](http://www.ot.wustl.edu/fptech)

This website catalogs different options for fall protection equipment related to residential construction. The catalog includes information on the fall protection equipment's relevant phase of construction, installation suggestions, instruction manuals, and example images (Washington University in St. Louis).

**Center for Construction Research and Training (CPWR)** – <https://www.cpwr.com/publications/handouts-and-toolbox-talks>

The Center for Construction Research and Training provides a wealth of knowledge on safety and health issues impacting workers and employers in the Construction industry. The webpage provides handouts and toolbox talks, as well as information on recent research and trainings.

**National Safety Stand-Down Campaign** – [www.cdc.gov/niosh/construction/stopfalls.html](http://www.cdc.gov/niosh/construction/stopfalls.html)

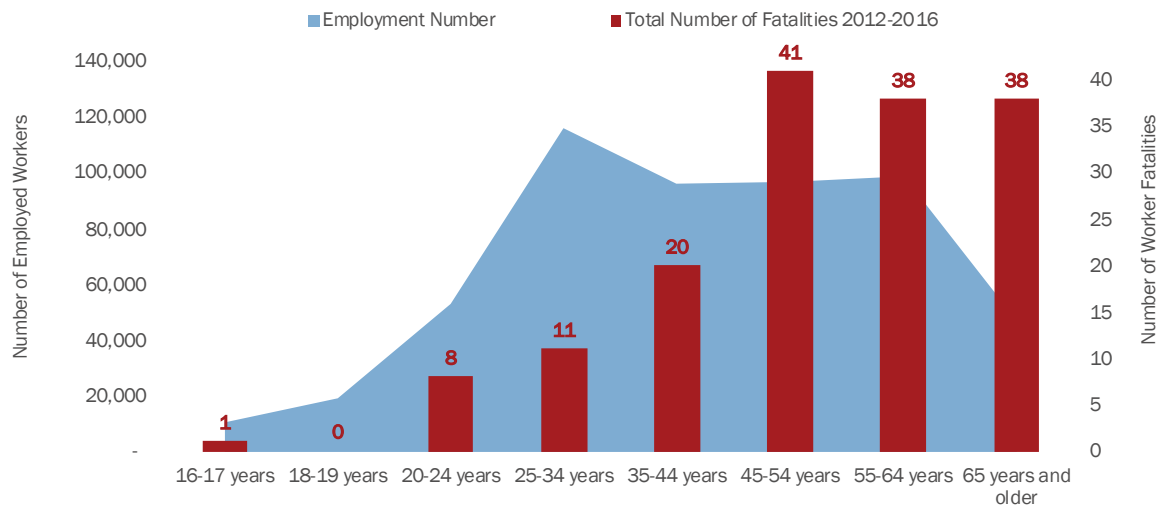
The 2018 National Stand-Down to Prevent Falls in Construction campaign will take place in May 2018. The goal of the campaign is to raise awareness about construction falls and to provide practical information about fall prevention for employers and workers across the construction industry. Specific safety resources are available at the campaign website ( [stopconstructionfalls.com](http://stopconstructionfalls.com)) related to ladders, scaffolds, roofs, and other materials.

**Workplace Violence Fact Sheet** – [https://www.osha.gov/OshDoc/data\\_General\\_Facts/factsheet-workplace-violence.pdf](https://www.osha.gov/OshDoc/data_General_Facts/factsheet-workplace-violence.pdf)

This fact sheet provides an introduction to workplace violence, and includes what employers and employees can do to protect themselves and their workplaces (Occupational Safety and Health Administration).

## Work-Related Fatalities and Older Workers

### Number of Worker Fatalities and Total Employed Workers by Age Group, Montana, 2012-2016



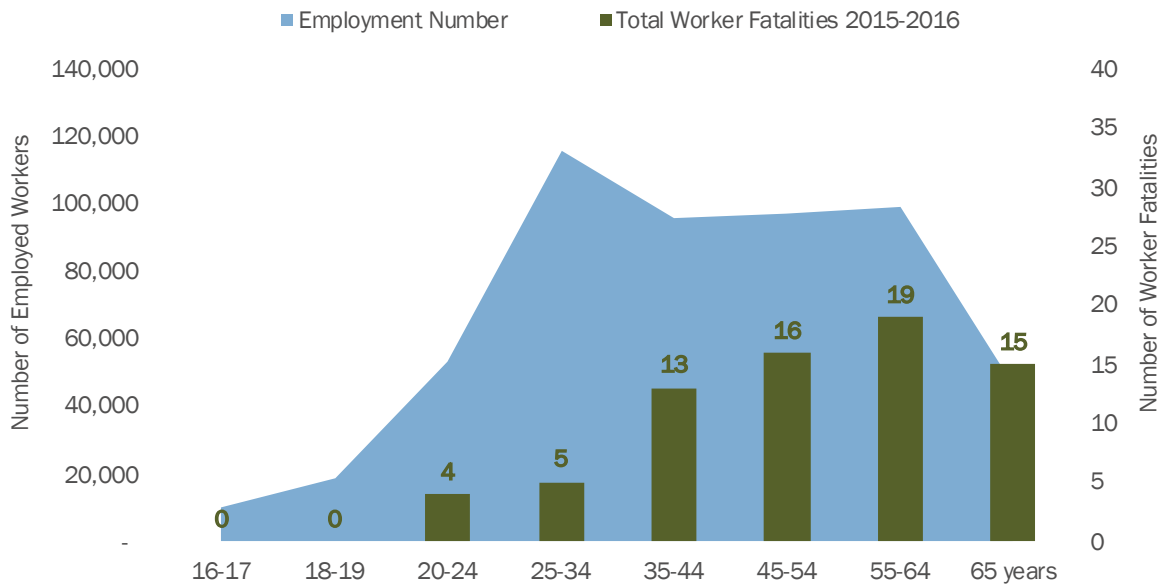
Source: BLS CPS 2016 Annual Average Employment Data and BLS CFOI



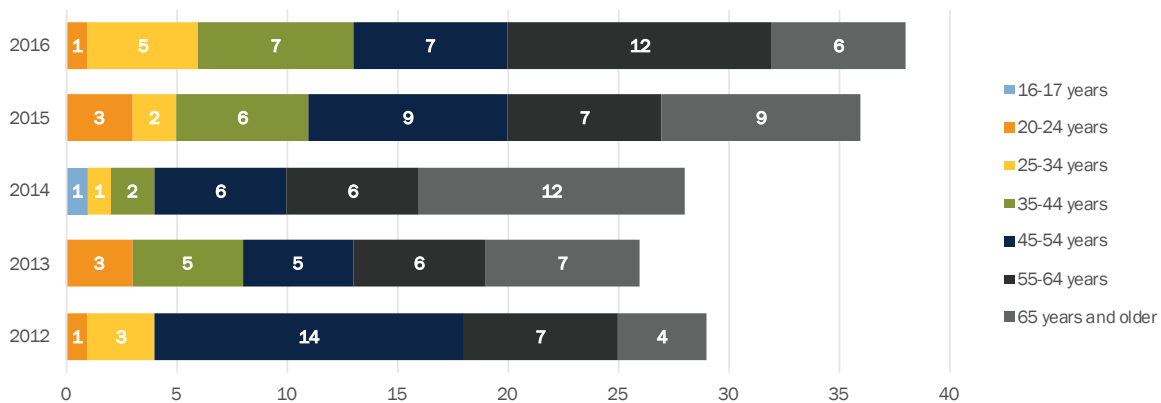
Workers 45 years old and up have the highest number of worker deaths, but represent less than half of all employed workers in Montana.

This chart shows the total number of worker deaths by age group from 2012 to 2016 (in red), on the right-hand vertical axis, overlapped by the total number of adult civilian workers in each age group in 2016, represented by the blue area. Workers 45 years old and up have the highest numbers of worker fatalities, but represent less than half of the employment in Montana. Older workers died on the job disproportionately to their representation in the economy in Montana. This phenomenon is especially noticeable for the oldest workers (65 years old and up). On the other hand, younger workers between 20-44 years old accounted for fewer worker deaths in Montana, but represented more of the economy in Montana. The same conclusion is represented in the graph on the next page, which shows 2016 employment information and the total number of fatalities from 2015 and 2016 only.

## Number of Worker Fatalities and Total Employed Workers by Age Group, Montana, 2015-2016



## Counts of Work-Related Fatalities by Age Group, Montana, 2012-2016



This chart shows the worker fatalities for each year broken down by age group. Workers age 45 and above accounted for about 45% of all workers in Montana in 2016, but 71% of fatalities were workers 45 years and older from 2012 to 2016.



**71%** of all workers who died in Montana from 2012-2016 were **45 years old and older**.

## Counts of Fatal Events and Exposures Among Older Workers, 2015 and 2016

Fatal Events or Exposures	All Older Workers	45-54 Years Old	55-64 Years Old	65 Years and Up
<b>All Work-Related Fatalities</b>	<b>50</b>	<b>16</b>	<b>19</b>	<b>15</b>
Transportation incidents	23	9	6	8
Violence and other injuries by persons or animals	1	-	1	-
Contact with objects and equipment	4	2	2	-



50 older workers died on the job in 2015 and 2016. More older workers died in work-related transportation incidents than other types of events or exposures leading to fatal injuries (23 older workers).

The most common fatal event or exposure for older workers in 2015 and 2016 were **jackknifed or overturned (non-collision)** transportation incidents (5 workers).

## Details of Fatal Events and Exposures Among Older Workers, 2015 and 2016

Specific Fatal Events or Exposures	All Older Workers	45-54 Years Old	55-64 Years Old	65 Years and Up
<b>All Work-Related Fatalities</b>	<b>50</b>	<b>16</b>	<b>19</b>	<b>15</b>
Jackknifed or overturned on roadway (non-collision)	5	2	2	1
Homicide	2	-	2	-
Aircraft crash during takeoff or landing due to mechanical failure	2	1	1	-
Jackknifed or overturned on non-roadway (non-collision)	1	-	-	1
Roadway collision - moving in opposite directions, oncoming	1	-	1	1
Vehicle struck object or animal on side of roadway	1	-	1	1
Collision between rail & roadway vehicle	1	-	-	1
Struck by falling object or equipment (other than powered vehicle)	1	-	1	-
Fall to lower level less than 6 feet	1	-	-	1
Fall to lower level 6 to 10 feet	1	1	-	1
Struck by other falling powered vehicle	1	-	-	-
Struck by object falling from vehicle or machinery (other than vehicle part)	1	1	-	-
Landslide	1	1	-	-

Note: Counts may not add up to total fatalities for age groups due to availability of data (BLS CFI).



## Online Safety Resources – Older Workers

Many fatalities among older workers are preventable. The following resources provide useful information related to risks facing older workers on the job that were identified in this report:

**Older Drivers in the Workplace: How Employers and Workers Can Prevent Crashes** – [www.cdc.gov/niosh/docs/2016-116/pdfs/2016-116.pdf](http://www.cdc.gov/niosh/docs/2016-116/pdfs/2016-116.pdf)

This six-page user guide briefly describes how aging affects driving ability in older workers, and provides resources and tools for both employers and workers to prevent crashes at work (National Institute for Occupational Safety and Health).

**Keeping Aging Workers Safe** – [www.safetyandhealthmagazine.com/articles/15023-aging-workers](http://www.safetyandhealthmagazine.com/articles/15023-aging-workers)

This article from the National Safety Council's Safety + Health magazine highlights specific issues facing older workers, and how to accommodate an aging workforce (National Safety Council).

**Aging in the Workplace Fact Sheet** – [www.tdi.texas.gov/pubs/videoresource/fsageinwork.pdf](http://www.tdi.texas.gov/pubs/videoresource/fsageinwork.pdf)

This fact sheet describes changes in older workers that may have an impact on safety in the workplace, and provides steps that employers and workers can take to prevent injuries (Texas Department of Insurance).

**Safe At Any Age: Effective Messaging** – [www.safetyandhealthmagazine.com/articles/16139-safe-at-any-age](http://www.safetyandhealthmagazine.com/articles/16139-safe-at-any-age)

This article addresses challenges that may arise when communicating with older and younger workers, with special emphasis on communication methods and effective trainings (National Safety Council).

# Action Steps to Prevent Fatalities

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- Seat Belt Use
- Speed – Drive for the Conditions
- All-Terrain Vehicles (ATVs)
- Distracted Driving



## Seat Belt Use

Wearing a seat belt is the most effective step a worker can take to prevent fatal injuries in a crash or transportation incident.<sup>1,2</sup> If a person is involved in a rollover or overturn incident in a vehicle and is not wearing a seatbelt, that person can be thrown out of the vehicle and killed.

### Map of States with Primary and Secondary Seat Belt Laws, as of March 2018

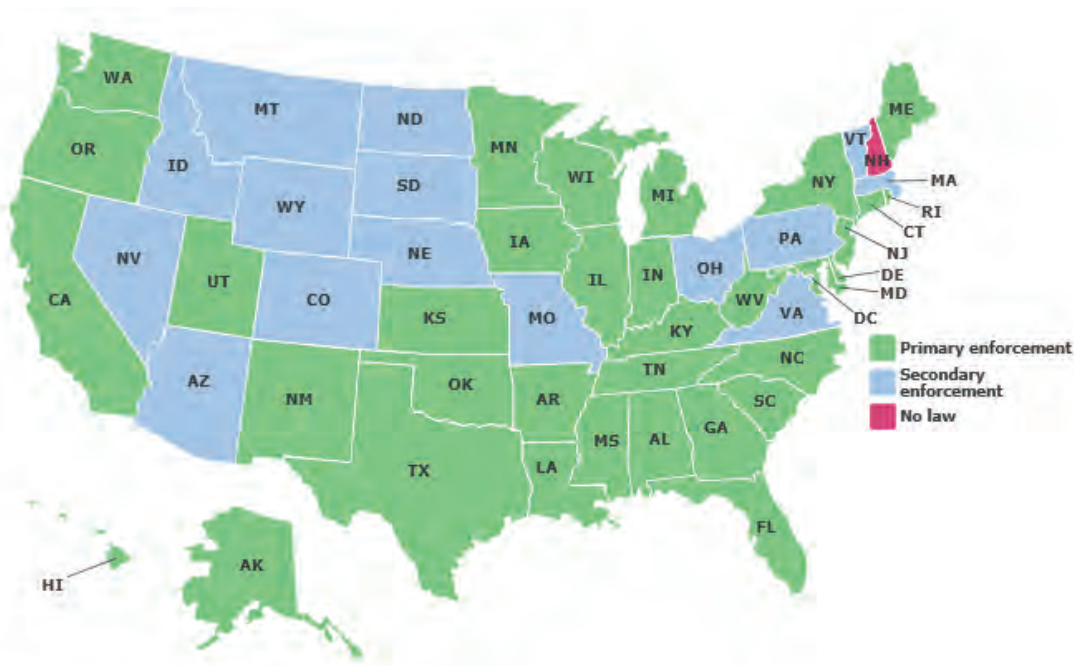


Image source: Insurance Institute for Highway Safety Highway Loss Data Institute - [www.iihs.org/iihs](http://www.iihs.org/iihs)

**In Montana, only 76% of drivers and front seat passengers wear seat belts, compared to 86% nationally.<sup>3</sup>**

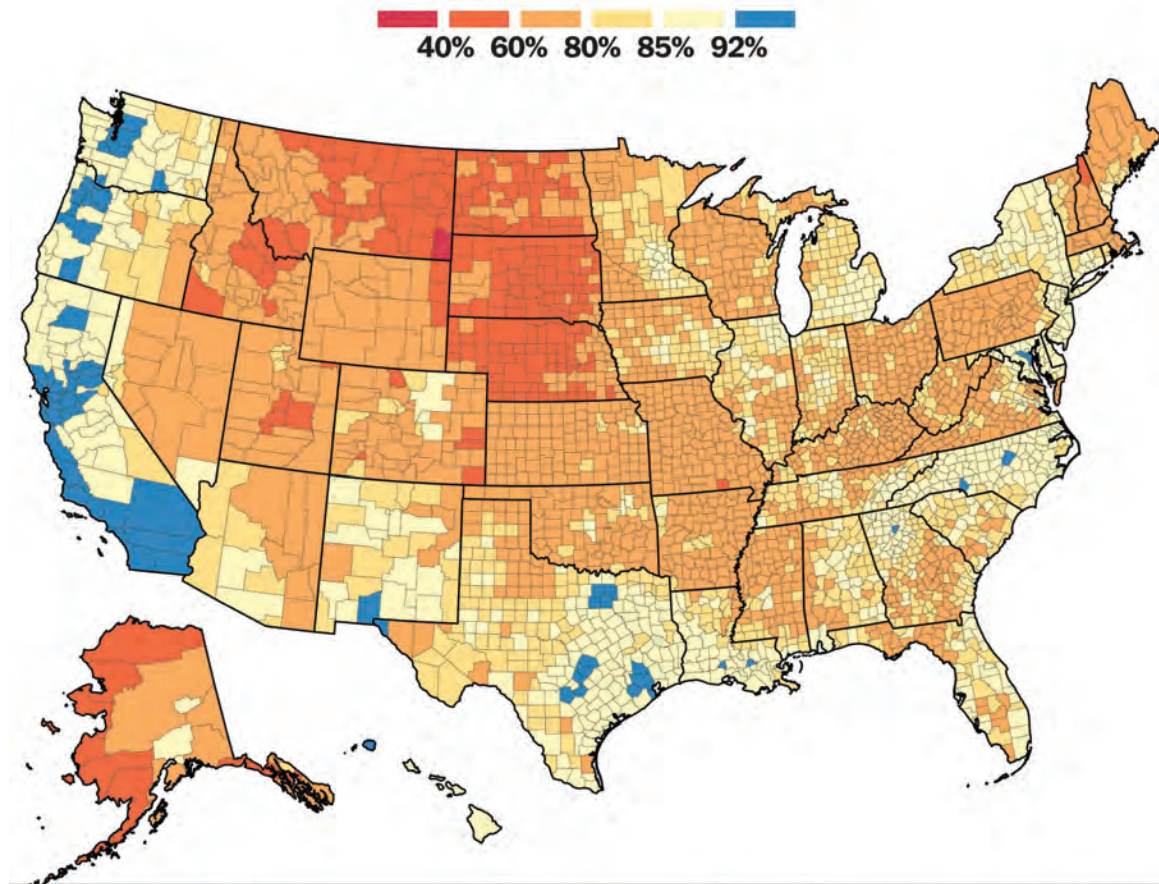
Drivers can only be ticketed for not wearing a seat belt in Montana if they have been pulled over by an officer for another reason, called a “secondary enforcement seat belt law.”

Primary enforcement seat belt laws have been shown to reduce deaths and increase seat belt usage, compared to secondary enforcement seat belt laws.<sup>2</sup>

**It has been estimated that enacting a primary seat belt law would increase seat belt use by 10% in Montana, protecting closer to 86% of Montanans.<sup>2,3</sup>**



## Seat Belt Use by County, 2012



WAP0.ST/WONKBLOG

Source: Sunshine, Dwyer-Lindgren, Chen, and Mokdad

Image source: Washington Post - [www.washingtonpost.com](http://www.washingtonpost.com)

For seat belt laws to be truly effective, the law should apply to every passenger in the car, and the fine associated with the ticket must be high enough to be effective.<sup>1</sup>

**To improve worker safety on the road, employers should require seat belt use at all times by all vehicle occupants, and make sure that there are enough functioning seat belts for every occupant.<sup>4</sup>**

## Speed – Drive for the Conditions

The safe speed to drive is the speed that fits the road conditions. However, road conditions in Montana are frequently not ideal, with ice and snow creating dangerous driving conditions. Speed limits posted on road signs are based on the speed that 85% of people drive in ideal conditions.<sup>5</sup>

**A car traveling 40 miles per hour takes 770 feet to stop on ice, but the daytime speed limit for car on the interstate in Montana is 80 miles per hour, and 70 miles an hour on two-lane roads.<sup>5,6</sup>**

Workers have died in Montana in types of transportation incidents that are commonly caused by high speeds and unsafe road conditions, including jackknifing, overturns, and rollovers. All drivers should travel at safe speeds, to prevent crashes and transportation incidents. Even so, workers may experience pressures or be encouraged to “get the job done” to save time and money, which can lead to unsafe driving speeds and increased risks. Employers should encourage employees to drive safely, and should not incentivize or put pressure on employees to travel at unsafe speeds for the road conditions.

**Work plans and driving schedules should factor in poor weather conditions and safety hazards, in addition to distance and traffic considerations.**

## All-Terrain Vehicles (ATVs)

Off-road vehicles (ATVs, UTVs, and side-by-sides) are useful tools on the job and for recreation, but are also potentially dangerous and require training for safe use. Seven workers died while riding ATVs in 2015 and 2016 in Montana. ATVs can be unstable and difficult to control, especially at high speeds. It is very important that the vehicle fits the size of the driver, and that the vehicle is not pushed off-balance by other riders or loads.

**Children and young adults also need to be protected when driving or riding all-terrain vehicles, especially on the farm or ranch. About 3,000 children younger than 16 years old were killed while riding ATVs in the United States from 2001 to 2011.<sup>7</sup>**

There are no federal safety guidelines or age restrictions on ATV use, so it is up to the states to come up with guidelines and laws. Currently, Montana does not have broad requirements for safety training to be completed by adults or children driving or riding all-terrain vehicles. In Montana, all riders who are under the age of 16 and over the age of 11 are required to complete an approved ATV Safety Course, and carry the Montana ATV Safety Certificate with them while riding on public roads open to full size vehicles ([www.atvcourse.com/usa/montana](http://www.atvcourse.com/usa/montana)).

In the 2017 Montana Legislature, Senate Bill No. 314 (MCA 23-2-284) was signed into law, which stated that a child younger than 12 years old can operate an off-road vehicle on unpaved roads or highways as long as they are accompanied by an adult, and the vehicle is operated in a “reasonable and prudent manner”.<sup>8</sup> The bill also stated that children aged 12-16 years of age did not have to have a license to operate an off-road vehicle.<sup>8</sup> Safety measures were not included in this law.

**All-terrain vehicles can be dangerous if not operated safely. Adults, workers, and children should take extra precautions when using these vehicles for jobs or recreation.**

Several ATV safety resources and trainings were featured earlier in this report. Workers can use those resources to understand the risks that come with riding and using ATVs at work. Employers should provide training sessions or reviews on how to safely use ATVs for specific job tasks. In addition, parents, family members, and friends can act as examples of how to safely and cautiously use ATVs for Montanan’s future workers – children and young adults.

## Distracted Driving

Nationally, car crashes are the top cause of workplace death, and distracted driving is a leading cause of car crashes.<sup>9</sup> Distracted driving increases the risk of single-vehicle crashes and rear-end crashes.<sup>10</sup>

**The most common distractions while driving include talking to passengers, adjusting radio or temperature controls, eating, and using a cell phone.<sup>10</sup>**

According to the National Safety Council, drivers should follow the “essential trio” when driving:<sup>11</sup>

- Eyes on the road;
- Hands on the wheel; **and**
- Mind on driving

Certain cities and counties in Montana have bans on the use of handheld cell phones while driving, but talking on a hands-free device is still dangerous.<sup>11,12</sup> Banning handheld cell phones helps drivers keep their eyes and hands on the road, but the driver’s mind is still distracted when talking on the phone. Hands-free devices include speakerphones, dashboard systems, and earpieces.<sup>11</sup> Drivers talking on a phone can miss up to 50% of their surroundings when looking through the windshield, including using hands-free devices.<sup>11</sup>

**Workplace policies that restrict distractions, including cell phone use while driving or operating machinery, can help to minimize the risk of crashes and transportation incidents.**

Different distracted driving policies will fit different workplaces, and two examples can be found on the Road Safety At Work webpage ([roadsafetyatwork.ca/tool-kits/distracted-driving/distracted-driving-policy-examples](https://roadsafetyatwork.ca/tool-kits/distracted-driving/distracted-driving-policy-examples)).



# In Conclusion



- Safety Culture in Montana
- References





## Safety Culture in Montana

Preventing work-related fatalities in Montana starts with every employer and every worker. There is no silver bullet to prevent all work-related fatalities, and instead it relies on committing to safe workplace practices and expectations every day.

Every worker death is one too many, and this report provides starting points to address some of Montana's major target areas and actions steps related to work-related fatalities:

- Vehicle and transportation-related incidents;
- Agriculture Industry;
- Construction Industry; and
- Older workers

Montana is a unique place to work and live. Employers and workers are faced with challenges every day, but a workplace fatality is never just part of the job.

**At the end of the day, the goal is a job well-done, and to have every worker go home safely.**

This goal requires that extra time and energy be spent on addressing safety risks and concerns, and attention paid to actively preventing fatal injuries for every job or task. Employers and workers must remain vigilant to all risks.

We hope that this report provides helpful information to target major issues related to worker fatalities in Montana, as well as practical action steps to take to make Montana a safer place to work in the future.

**For more information about worker health and safety issues facing Montana, please visit the MOHSS program at [www.mtworkerhealth.com](http://www.mtworkerhealth.com).**

If you have any questions or comments about this report or other information, the Montana Occupational Health & Safety Surveillance program at (406) 444-1722 or email [jbrennan@mt.gov](mailto:jbrennan@mt.gov).

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